



The Big Payoff:

EDUCATIONAL ATTAINMENT AND ESTIMATES OF WORK-LIFE EARNINGS

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We all intuitively know that going to school means a better, higher paying job. But how much of a difference does it really make to your pocketbook? The following report puts a dollar value on what education can mean for your lifetime earnings.

Does going to school pay off? Most people think so. Currently, almost 90% of young adults graduate from high school and about 60% of high school seniors continue on to college the following year. People decide to go to college for many reasons. One of the most compelling is the expectation of future economic success based on educational attainment.

This report illustrates the economic value of an education, that is, the added value of a high school diploma or college degree. It explores the relationship between educational attainment and earnings and demonstrates how the relationship has changed over the last 25 years. Additionally, it provides, by level of education, estimates of the average total earnings adults are likely to accumulate over the course of their working lives.

These estimates of work-life earnings, which are based on data from the Current Population Survey (CPS), are illustrative and do not predict actual future earnings. The work-life earnings are “expected average amounts” based on cross-sectional earnings data from the preceding calendar year by age, sex, full- or part-time work experience, race, Hispanic origin, and educational attainment groupings, as collected in the March 1998, 1999, and 2000 Current Population Surveys. The work-life estimates are thus based on 1997-1999 earnings data and are shown in terms of “present value” (constant 1999) dollars.

Education and Earnings

We are more educated than ever.

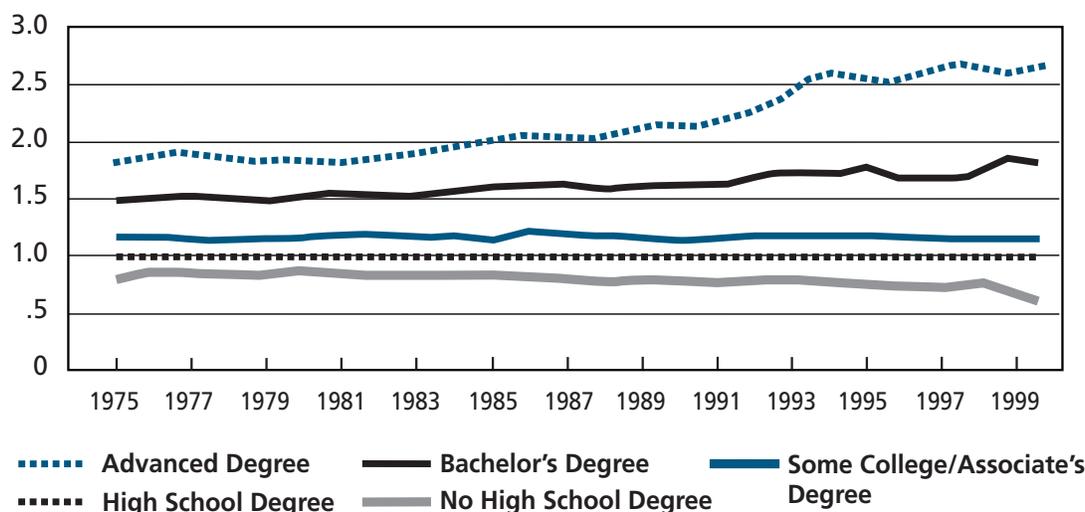
In 2000, 84% of American adults ages 25 and over had at least completed high school; 26% had a bachelor’s degree or higher. Both figures were all-time highs. In 1975, 63% of adults had a high school diploma, and 14% had obtained a bachelors degree. Much of the increase in educational attainment levels of the adult population is due to a more educated younger population replacing an older, less educated population. As more and more people continue their schooling, our more highly-educated population can pursue opportunities to enter into occupations yielding higher returns in earnings.

Earnings increase with educational level.

Adults ages 25 to 64 who worked at any time during the study period earned an average of \$34,700 per year. Average earnings ranged from \$18,900 for high school dropouts to \$25,900 for high school graduates, \$45,400 for college graduates, and \$99,300 for workers with professional degrees (M.D., J.D., D.D.S., or D.V.M.). Each successively higher education level is associated with an increase in earnings (with the exception of professional degrees, who on average earn more than those with doctoral degrees).

Work experience also influences earnings. Average earnings for people who worked full-time, year-round were somewhat higher than average earnings for all workers (which include people who work part-time or for part of the year). Most workers

Figure 1: Average Earnings of Full-Time, Year-Round Workers as a Proportion of the Average Earnings of High School Graduates by Educational Attainment, 1975 to 1999



SOURCE: U.S. Census Bureau, Current Population Surveys, March 1976-2000

worked full-time and year-round (74%). However, the commitment to work full-time, year-round varies with demographic factors, such as educational attainment, sex, and age. For instance, high school dropouts (65%) are less likely than people with bachelor's degrees (77%) to work full-time and year-round. Historically, women's attachment to the labor force has been more irregular than men's due mostly to competing family responsibilities. Earnings estimates based on all workers (which includes part-time workers) include some of this variability. Yet, regardless of work experience, the education advantage remains.

In an effort to provide a straight-forward analysis of potential earnings, this report discusses earnings for full-time, year-round workers only.

Historically, education has paid off.

Over the past 25 years, earnings differences have grown among workers with different levels of educational attainment. As shown in Figure 1, in 1975, full-time, year-round workers with a bachelor's degree had 1.5 times the annual earnings of workers with only a high school diploma. By 1999, this ratio had risen to 1.8. Workers with an advanced degree, who earned 1.8 times the earnings of high school graduates in 1975, averaged 2.6 times the earnings of workers with a high school diploma in 1999. During the same period, the relative earnings of the least educated workers fell. While in 1975, full-time,

year-round workers without a high school diploma earned 0.9 times the earnings of workers with a high school diploma; by 1999, they were earning only 0.7 times the average earnings of high school graduates.

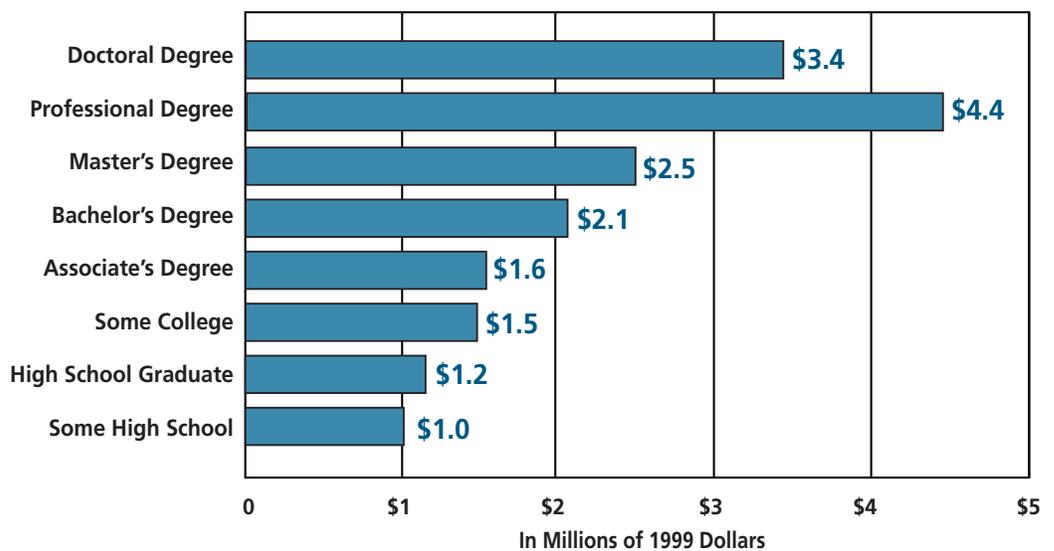
The historical change in relative earnings by educational attainment may be explained by both the supply of labor and the demand for skilled workers. In the 1970s, the premiums paid to college graduates dropped because of an increase in their numbers, which kept the relative earnings range among the educational attainment levels rather narrow. Recently, however, technological changes favoring more skilled (and educated) workers have tended to increase earnings among working adults with higher educational attainment, while, simultaneously, the decline of labor unions and a decline in the minimum wage in constant dollars have contributed to a relative drop in the wages of less educated workers.

Education Pays Off for a Lifetime

Earnings difference by educational attainment compound over one's lifetime.

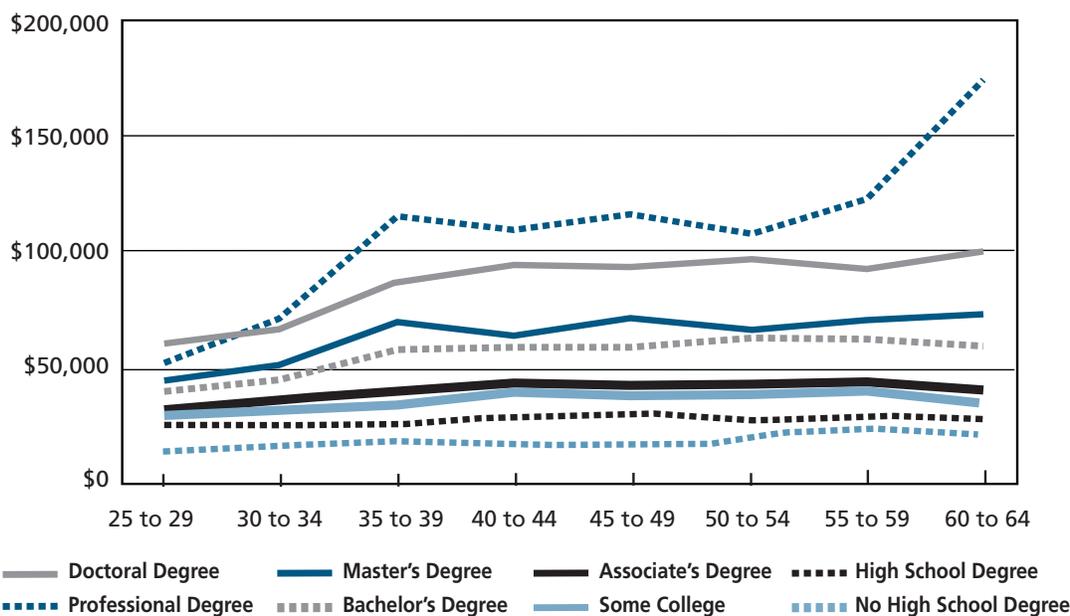
Estimates of work-life earnings dramatically illustrate the differences that develop between workers of different educational levels over the course of their working lives.

Figure 2: Work-Life Earnings Estimates for Full-Time, Year-Round Workers by Educational Attainment



SOURCE: U.S. Census Bureau, Current Population Surveys, March 1998, 1999, and 2000

Figure 3: Earnings Trajectories for Full-Time, Year-Round Workers by Educational Attainment Based on 1997–1999 Work Experience



SOURCE: U.S. Census Bureau, Current Population Surveys, March 1998, 1999, and 2000

As shown in Figure 2, for full-time, year-round workers, the 40-year earnings estimates are about \$1.0 million (in 1999 dollars) for high school dropouts, while completing high school would increase earnings by another quarter-million dollars (to \$1.2 million). People who attended some college (but did not earn a degree) might expect work-life earnings of about \$1.5 million, and slightly more for people with associate's degrees (\$1.6 million). Over a work-life, individuals who have a bachelor's degree would earn on average \$2.1 million — about one-third more than workers who did not finish college, and nearly twice as much as workers with only a high school diploma. A master's degree holder tops a bachelor's degree holder at \$2.5 million. Doctoral (\$3.4 million) and professional degree holders (\$4.4 million) do even better.

The large differences in average work-life earnings among the educational levels reflects both differential starting salaries and also disparate earnings trajectories — that is, the path of earnings over one's life. As Figure 3 shows, the earnings path of people with doctoral and professional degrees look very different from those of workers at other levels of education. At most ages, however, more education equates to higher earnings. Indeed the educational payoff is most notable at the highest educational levels.

Sex, Education, and Earnings

The educational gap between men and women is narrowing.

Among people ages 25 and older, the percentage of men and women with a bachelor's degree has increased sharply over the past 25 years, with women markedly narrowing the gap. In 1975, 18% of men and 11% of women had attained a bachelor's degree. By 2000, 28% of men and 24% of women had a bachelor's degree. In fact, in each year since 1982, more American women than men have received bachelor's degrees. Additionally, 84% of both men and women had completed high school in 2000, up from 63% for men and 62% for women in 1975.

Men earn more than women at each educational level.

Men had higher average earnings than women with similar educational attainment. Among full-time, year-round workers ages 25 to 64, the female-to-male earnings ratio was 0.67 during the study period. This wage gap occurred with very little variation at every level of educational attainment.



Across the ages, however, the female-to-male earnings ratio was higher among younger full-time, year-round workers (0.84) than among older workers (0.56). Clearly, younger women begin their work-life with earnings much closer to those realized by men. This pattern of male and female younger workers starting with closer earnings than those of older workers is not new. In 1975, the earnings ratio was 0.69 for younger workers compared with 0.56 for older workers. The age differences remain, although the earnings gap between younger men and women is closing.

At both the high school and bachelor's attainment level, the earnings of younger women and men during the 1997–1999 study period are relatively close, with women earning about four-fifths of men's earnings. However, for workers with a bachelor's degree, the earnings difference between men and women becomes more pronounced as workers

age (from 0.81 for ages 25 to 29 years compared with 0.60 for ages 60 to 64), compared with a relatively flat earnings difference for workers at the high school level.

Numerous events over one's work-life may account for the expanding gap with age, such as continuous participation in the labor force, commitment to career goals, competing events, discrimination, and promotions. These and other factors may lower the earnings of women relative to men, and these differences play out dramatically with total work-life earnings.

The gap between men's and women's work-life earnings is substantial.

On average, a man with a high school education will earn about \$1.4 million from ages 25 to 64 years. This compares with about \$2.5 million for

men completing a bachelor's degree and \$4.8 million for men with a professional degree. In contrast, men with less than a high school education will earn an average of \$1.1 million.

Women completing high school will earn an average of \$1.0 million, about 40% less than the estimated \$1.6 million for women completing a bachelor's degree. The work-life payoffs for women with professional (\$2.9 million) and doctoral (\$2.5 million) degrees, though substantial lag markedly behind those of men with the same educational attainment.

The cumulated difference between men and women amounts to about \$350,000 for high school dropouts. The difference increases to \$450,000 for high school graduates and to about twice that for bachelor's degree holders. Men with professional degrees may expect to earn almost \$2 million more than their female counterparts over their work-life.

Race and Hispanic Origin, Education, and Earnings

Educational attainment and work-life earnings vary by race and Hispanic origin.

Among adults 25 years and over in 2000, 88% of white non-Hispanics, 86% of Asians and Pacific Islanders, and 79% of blacks had attained at least a high school diploma. Similarly, 28% of white non-Hispanics, 44% of Asians and Pacific Islanders, and 17% of blacks had received a Bachelor's degree. For Hispanics (who may be of any race), only 57% had a high school diploma and 11% a bachelor's degree. Even accounting for these large differences in educational attainment by looking at earnings within each educational category, earnings differences persist and can accumulate dramatically over a 40-year work-life.

White non-Hispanics earn more than blacks or Hispanics at almost every level of educational attainment. For example, among full-time, year-round workers with a high school education, white non-Hispanics will earn an average of \$1.3 million during their working life, compared with about \$1.1 million earned by blacks and Hispanics. At the bachelor's level, white non-Hispanics can expect total earnings of about \$2.2 million, compared with \$1.7 million for blacks or Hispanics.

While Asians and Pacific Islanders earn less than white non-Hispanics with similar educational attainment at the high school graduate level and the bachelor's level, Asians and Pacific Islanders with graduate degrees (Master's, doctoral, or professional) have earnings similar to those of white non-

Hispanics. Among full-time, year-round workers with a high school diploma or bachelor's degree, Asians and Pacific Islanders will earn about \$200,000 and \$400,00 less, respectively than white non-Hispanics during their work-life.

Though on average, work-life earnings are lower for blacks and Hispanics than white non-Hispanics of the same educational attainment level, the educational investment still pays off. Black workers with less than a high school education would earn less than a million dollars during their work-life, increasing to \$1.0 million for workers with a high school education, \$1.7 for a bachelors' degree, and \$2.5 million for an advanced degree. Likewise, Hispanic work-life earnings also reflect this ascending outcome. Thus, regardless of race or ethnicity, higher educational attainment equates to higher earnings.

The economic reward for each succeeding level of educational attainment differs by group. Though the work-life earnings differences between a high school dropout and a high school graduate are fairly uniform for the three race groups and Hispanics, about \$200,000 each, work-life earnings for workers with a bachelor's degree compared with workers with just a high school diploma increased by \$1 million for white non-Hispanics and about \$700,000 for Asians and Pacific Islanders, blacks, and Hispanics. More dramatic differences appear between the work-life earnings for people with advanced degrees and bachelor's degrees. Continuing college beyond the bachelor's level pays an extra \$800,000 for white non-Hispanics and blacks compared with \$1.3 million for Asians and Pacific Islanders.

Conclusion

This study makes clear that education has a profound impact on an individual's lifetime earning. However, this is still a wide disparity in salaries — at every educational level — between men and women and between white non-Hispanics, blacks, Hispanics, and Asian and Pacific Islanders. Policymakers need not look any further than the wide gulf between the estimated lifetime earnings of a high school dropout and a college graduate, or the discrepancy between male and female or black and white estimated lifetime earnings to see the need for policies that address these areas of concern.

The electronic version of this report is available on the Census Bureau's website, www.census.gov. Once on the site, click on "E" under the "Subject A-Z" heading, and then on "Educational Attainment."